

\$103(a) rejection of claim 18, 20-30, 33-41, and 43-45, and (vii) the 35 U.S.C. \$103(a) rejection of claims 31 and 46.

**The 35 U.S.C. \$102(e) rejection of claims 1 and 2**

Claims 1 and 2 were rejected under 35 U.S.C. \$102(e) as being anticipated by Muller et al.

Claim 1 recites a vehicle component that comprises a biodegradable material. The biodegradable material includes a polyhydroxyalkanoate resin.

Claim 1 is not anticipated by Muller et al. because Muller et al. do not disclose a vehicle component that comprises a biodegradable material which includes a polyhydroxyalkanoate resin.

Muller et al., as noted in the Office Action, teach that molding compositions can be formed into engine and other mechanical parts. (Column 1, lines 15-21). Muller et al. further teach a molding composition for forming a finished molded product. (Column 2, lines 52-54). The molding compositions include a polyhydroxyalkanoate binder and a powdered material, such as a metal powder, ceramic powder, or blend. (Column 2, lines 53-56).

Muller et al., however, teach that the polyhydroxyalkanoate binder is not present in the finished molded product. Muller et al. teach the binder is removed prior to forming the finished product. (Column 2, lines 51-52). Various techniques are listed for removing the polyhydroxyalkanoate binder prior to forming the finished product, such as heating the molding composition or using solvent processes. (Column 6, lines 63+, column 7, lines 1-

44). Thus, the finished product, whether it is an engine or mechanical part, does not include a polyhydroxyalkanoate resin.

In contrast, claim 1 positively recites that the vehicle component includes a polyhydroxylakanoate resin. Therefore, Muller et al. do not teach the limitations of claim 1 and withdrawal of the rejection of claim 1 is respectfully requested.

Claim 2 depends from claim 1 and further recites that the polyhydroxyalkanoate resin is a homo-polymer or copolymer of hydroxyalkanoate monomer units selected from the group consisting of 3-hydroxybutyrate, 3-hydroxyvalerate, 3-hydroxyoctanoate, 4-hydroxybutyrate, 5 5-hydroxyvalerate, 5-hydroxycaproate, 6-hydroxycaproate, 6-hydroxycaprylate, and 6-hydroxypropionate.

As note above respect to claim 1, Muller et al. do not teach a vehicle component that includes a polyhydroxyalkanoate resin. Thus, claim 2 is allowable for the aforementioned deficiencies of the rejection of claim 1 and for the specific limitations recited in claim 2. Therefore, withdrawal of the rejection of claim 2 is respectfully requested.

**The 35 U.S.C. §103(a) rejection of claims 3, 8, and 10-13.**

Claims 3, 8, and 10-13 were rejected under 35 U.S.C. §103(a) as being obvious over Muller et al. in view of Noda et al.

Claim 3 depends from claim 1 and further recites that the vehicle component is made from a composite. The composite

comprises a continuous matrix of the polyhydroxyalkanoate resin reinforced with a biodegradable fiber.

Claims 3 is patentable over Muller et al. in view of Noda et al. because Muller et al. in view of Noda et al. do not disclose or suggest (a) a vehicle component that includes a polyhydroxyalkanoate resin, and (b) a vehicle component that includes a polyhydroxyalkanoate resin reinforced with a biodegradable material.

Muller et al., as discussed above, teach molding compositions that include a polyhydroxyalkanoate binder and a powdered material. The polyhydroxyalkanoate binder is removed from the molding composition prior to forming the finished product. The finished product does not include a polyhydroxyalkanoate binder. Thus, Muller et al. do not teach or suggest a vehicle component that includes a polyhydroxyalkanoate resin.

Moreover, Muller et al. do not teach or suggest that the finished product can include a polyhydroxyalkanoate resin reinforced with a biodegradable material. The finished product in Muller et al. does not include the polyhydroxyalkanoate binder; therefore, it cannot include a polyhydroxyalkanoate resin reinforced with a biodegradable material.

Noda et al. teach a composite formed from a matrix of polyhydroxyalkanoate and a biodegradable fiber. The matrix is used to form an article, such as diapers, incontinence articles, and sanitary napkins. (Column 2, lines 53-58). Noda et al. do not teach that this matrix can be used for a

vehicle component or that a polyhydroxyalkanoate can be used for a vehicle component.

Assuming arguendo, that the teachings of Muller et al. could be combined with the teachings of Noda et al., the combined teachings would still not teach all of the limitations of claim 3. Even if Noda et al. suggests it is advantageous to use a matrix of polyhydroxyalkanoate, Muller et al. would still suggest that the polyhydroxyalkanoate be removed prior to forming the finished product.

Thus, Muller et al. in view of Noda et al. do not teach or suggest all the limitations of claim 3. Therefore, withdrawal of the rejection of claim 3 is respectfully requested.

Claim 8 depends from claim 3. As discussed above with respect to claim 3, Muller et al. in view of Noda et al. do not disclose or suggest (a) a vehicle component that includes a polyhydroxyalkanoate resin, and (b) a vehicle component that includes a polyhydroxyalkanoate resin reinforced with a biodegradable material. Therefore, claim 8 is allowable for the aforementioned deficiencies of the rejection of claim 3 and for the specific limitations recited in claim 8.

Claim 10 depends from claim 1 and further recites that the polyhydroxyalkanoate resin is in the form of polyhydroxyalkanoate fibers.

Claims 10 is patentable over Muller et al. in view of Noda et al. because Muller et al. in view of Noda et al. do not disclose or suggest (a) a vehicle component that includes a polyhydroxyalkanoate resin, and (b) a vehicle component that

includes a polyhydroxyalkanoate resin in the form of polyhydroxyalkanoate fibers.

Muller et al., as discussed above, teach molding compositions that include a polyhydroxyalkanoate binder and a powdered material. The polyhydroxyalkanoate binder is removed from the molding composition prior to forming the finished product. The finished product does not include a polyhydroxyalkanoate binder. Thus, Muller et al. do not teach or suggest a vehicle component that includes a polyhydroxyalkanoate resin.

Moreover, Muller et al. do not teach or suggest that the finished product can include a polyhydroxyalkanoate resin in the form of fibers. The finished product in Muller et al. does not include the polyhydroxyalkanoate binder therefore it cannot include a polyhydroxyalkanoate resin in the form of fibers.

Noda et al., as discussed in the Office Action, teach polyhydroxyalkanoate in the form of fibers. The fibers can be used to form an article, such as diapers, incontinence articles, and sanitary napkins. (Column 2, lines 53-58). Noda et al. do not teach that these fibers can be used for a vehicle component or that a polyhydroxyalkanoate can be used for a vehicle component.

Assuming arguendo, that the teachings of Muller et al. could be combined with the teachings of Noda et al., the combined teachings would still not teach all of the limitations of claim 10. Even if Noda et al. suggests it is advantageous to use a fibers of polyhydroxyalkanoate, Muller

et al. would still suggest that the polyhydroxyalkanoate be removed prior to forming the finished product.

Thus, Muller et al. in view of Noda et al. do not teach or suggest all the limitations of claim 10. Therefore, withdrawal of the rejection of claim 10 is respectfully requested.

Claims 11 and 12 depend directly from claim 1 and therefore should be allowable for the aforementioned deficiencies in the rejection of claim 10 and for the specific limitations recited respectively in claims 11 and 12.

Claim 13 depends from claim 1 and further recites that the biodegradable material is a biodegradable cellular material.

Claim 13 is patentable over Muller et al. in view of Noda et al. because Muller et al. in view of Noda et al. do not disclose or suggest (a) a vehicle component that includes a polyhydroxyalkanoate resin, and (b) a vehicle component that includes a cellular material.

Muller et al., as discussed above, teach molding compositions that include a polyhydroxyalkanoate binder and a powdered material. The polyhydroxyalkanoate binder is removed from the molding composition prior to forming the finished product. The finished product does not include a polyhydroxyalkanoate binder. Thus, Muller et al. do not teach or suggest a vehicle component that includes a polyhydroxyalkanoate resin.

Moreover, Muller et al. do not teach or suggest that the finished product can include a biodegradable material that is a cellular material.

Noda et al. teach a composite that includes polyhydroxyalkanoate and a biodegradable fiber. The composite is used to form an article, such as diapers, incontinence articles, and sanitary napkins. (Column 2, lines 53-58). Noda et al. do not teach that composite can be used for a vehicle component or that a polyhydroxyalkanoate can be used for a vehicle component.

Assuming arguendo, that the teachings of Muller et al. could be combined with the teachings of Noda et al., the combined teachings would still not teach all of the limitations of claim 13. Even if Noda et al. suggests it is advantageous to use polyhydroxyalkanoate, Muller et al. would still suggest that the polyhydroxyalkanoate be removed prior to forming the finished product.

Thus, Muller et al. in view of Noda et al. do not teach or suggest all the limitations of claim 13. Therefore, withdrawal of the rejection of claim 13 is respectfully requested.

**The 35 U.S.C. §103(a) rejection of claims 4-7 and 9.**

Claims 4-7 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over Muller et al. in view of Noda et al., and further in view of Hansen et al.

Claims 4-7 and 9 depend directly from claim 3. As discussed above with respect to claim 3, Muller et al. in view of Noda et al. do not disclose or suggest (a) a vehicle

component that includes a polyhydroxyalkanoate resin, and (b) a vehicle component that includes a polyhydroxyalkanoate resin reinforced with a biodegradable material. Therefore, claim 4-7 and 9 are allowable for the aforementioned deficiencies in the rejection of claim 3 and for the specific limitations recited respectively in claims 4-7 and 9.

**The 35 U.S.C. §103(a) rejection of claims 14-16.**

Claims 14-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Muller et al. in view of Willett et al.

Claim 14 depends from claim 1 and further recites that the biodegradable material further comprises a filler material.

Claims 14 is patentable over Muller et al. in view of Willett et al. because Muller et al. in view of Willett et al. do not disclose or suggest (a) a vehicle component that includes a polyhydroxyalkanoate resin, and (b) a vehicle component that includes a biodegradable material that comprises a polyhydroxyalkanoate resin and a filler material.

Muller et al., as discussed above, teach molding compositions that include a polyhydroxyalkanoate binder and a powdered material. The polyhydroxyalkanoate binder is removed from the molding composition prior to forming the finished product. The finished product does not include a polyhydroxyalkanoate binder. Thus, Muller et al. do not teach or suggest a vehicle component that includes a polyhydroxyalkanoate resin.

Moreover, Muller et al. do not teach or suggest that the finished product can include a polyhydroxyalkanoate resin and a filler. The finished product in Muller et al. does not include the polyhydroxyalkanoate binder therefore it cannot include a polyhydroxyalkanoate resin and a filler material.

Willett et al. teach an article that comprises a hydroxy-functional polyester. The article can also include a filler material. Willett et al. do not teach that this article can be used for a vehicle component or that a polyhydroxyalkanoate can be used for a vehicle component.

Assuming arguendo, that the teachings of Muller et al. could be combined with the teachings of Willett et al., the combined teachings would still not teach all of the limitations of claim 14. Even if Willett et al. suggest it is advantageous to use a polyhydroxyalkanoate and a filler material, Muller et al. would still suggest that the polyhydroxyalkanoate be removed prior to forming the finished product.

Thus, Muller et al. in view of Willett et al. do not teach or suggest all the limitations of claim 14. Therefore, withdrawal of the rejection of claim 14 is respectfully requested.

Claims 15 and 16 depend directly from claim 14 and therefore should be allowed for the aforementioned deficiencies in the rejection of claim 14 and for the specific limitations recited in claims 15 and 16.

The 35 U.S.C. §103(a) rejection of claims 17, 19, 32, and 42.

Claims 17, 19, 32 and 42 were rejected under 35 U.S.C. §103(a) as being unpatentable over Warnez et al. in view of Muller et al.

Claim 17 recites a vehicle occupant protection apparatus comprising a reaction canister and an inflatable vehicle occupant protection device contained in the reaction canister. At least one of the reaction canister and the inflatable vehicle occupant protection device is biodegradable and comprises a polyhydroxyalkanoate resin.

Claim 17 is patentable over Warnez et al. in view of Muller et al. because Warnez et al. in view of Muller et al. do not teach or suggest an automotive component that comprises a polyhydroxyalkanoate resin.

Muller et al., as discussed above, teach molding compositions that include a polyhydroxyalkanoate binder and a powdered material. The polyhydroxyalkanoate binder is removed from the molding composition prior to forming the finished product. The finished product does not include a polyhydroxyalkanoate binder. Thus, Muller et al. do not teach or suggest a vehicle component that includes a polyhydroxyalkanoate resin.

Warnez et al disclose a canister and airbag, but does not state that either element is biodegradable.

Thus, Warnez et al. in view of Muller et al. do not disclose automotive components comprising PHA or for that matter biodegradable automotive components. Therefore,

withdrawal of the rejection of claim 17 is respectfully requested.

Claims 19 depends from claim 17 and therefore should be allowable for the aforementioned deficiencies of the rejection of claim 17 and for the specific limitations recited in claim 19.

Claims 32 and 34 contain limitations similar to claim 17 and therefore should be allowable for the aforementioned deficiencies of the rejection of claim 17 and for the specific limitations recited in claims 32 and 34.

**The 35 U.S.C. §103(a) rejection of claim 18, 20-30, 33-41, and 43-45.**

Claims 18, 20-30, 33-41, and 43-45 were rejected under 35 U.S.C. §103(a) as being unpatentable over Warnez et al. in view of Muller et al., Noda, Hansen et al.

Claim 18 depends from claim 17 and further recites that the polyhydroxyalkanoate resin is a homo-polymer or copolymer of hydroxyalkanoate monomer units selected from the group consisting of 3-hydroxybutyrate, 3-hydroxyvalerate, 3-hydroxyoctanoate, 4-hydroxybutyrate, 5 5-hydroxyvalerate, 5-hydroxycaproate, 6-hydroxycaproate, 6-hydroxycaprylate, and 6-hydroxypropionate.

As discussed above with respect to claim 17, Muller et al. do not teach or suggest an automotive component that comprises a polyhydroxyalkanoate resin. Therefore, claim 18 is allowable for the aforementioned deficiencies of the rejection of claim 17 and for specific limitations recited in claim 18.

Claims 20-30 depend either directly or indirectly from claim 17. As discussed above with respect to claim 17, Muller

et al. do not teach or suggest an automotive component that comprises a polyhydroxyalkanoate resin. Therefore, claim 20-30 are allowable for the aforementioned deficiencies of the rejection of claim 17 and for specific limitations recited in claims 20-30.

Claims 33-41 depend either directly or indirectly from claim 32. As discussed above with respect to claim 32, Muller et al. do not teach or suggest an automotive component that comprises a polyhydroxyalkanoate resin. Therefore, claims 33-41 are allowable for the aforementioned deficiencies of the rejection of claim 32 and for specific limitations recited in claims 33-41.

Claims 43-45 depend either directly or indirectly from claim 42. As discussed above with respect to claim 42, Muller et al. do not teach or suggest an automotive component that comprises a polyhydroxyalkanoate resin. Therefore, claims 43-45 are allowable for the aforementioned deficiencies of the rejection of claim 42 and for specific limitations recited in claims 43-45.

**The 35 U.S.C. §103(a) rejection of claims 31 and 46.**

Claims 31 and 46 were rejected under 35 U.S.C. §103(a) as being unpatentable over Warnez et al. in view of Muller et al., Noda, Hansen et al., and further in view of Sinclair et al.


Claims 31 depends indirectly from claim 17. As discussed above with respect to claim 17, Muller et al. do not teach or suggest an automotive component that comprises a polyhydroxyalkanoate resin. Therefore, 31 is allowable for the aforementioned deficiencies of the rejection of claim 17 and for specific limitations recited in claims 33-31.

Claims 46 depends indirectly from claim 42. As discussed above with respect to claim 42, Muller et al. do not teach or suggest an automotive component that comprises a polyhydroxyalkanoate resin. Therefore, claim 46 is allowable for the aforementioned deficiencies of the rejection of claim 42 and for specific limitations recited in claims 46.

In view of the foregoing, it is respectfully submitted that the above-identified application is in condition for allowance, and allowance of the above-identified application is respectfully requested.

Please charge any deficiencies or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

  
Richard A. Sutkus  
Reg. No. 43,941

TAROLLI, SUNDHEIM, COVELL,  
& TUMMINO, L.L.P.  
1111 Leader Building  
526 Superior Avenue  
Cleveland, Ohio 44114-1400  
Phone: (216) 621-2234  
Fax: (216) 621-4072